

LDW SF/2.3.298.102  
12/01/04



## **Phase Two Environmental Site Assessment**

**Federal Center South Parking Lot  
East Marginal Way South from South Alaska Street to  
South Hudson Street  
Seattle, Washington**

prepared for:  
General Services Administration  
Auburn, Washington

**USEPA SF**



**1337350**

December 2004  
PBS Project # 40290.022

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**ENGINEERING AND ENVIRONMENTAL**

**[www.pbseiv.com](http://www.pbseiv.com)**

PHASE TWO  
ENVIRONMENTAL SITE ASSESSMENT

**Federal Center South Parking Lot  
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Prepared by  
  
PBS ENGINEERING AND ENVIRONMENTAL  
130 Nickerson Street, Suite 107  
Seattle, Washington 98109



December 2004

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## 1.0 INTRODUCTION

PBS Engineering and Environmental (PBS) completed a Phase Two Environmental Site Assessment at the Federal Center South Parking Lot along East Marginal Way South between South Alaska Street and South Hudson Street in Seattle, Washington (Figure 1). The work was performed in accordance with a PBS proposal dated November 29, 2004, and a GSA Notice-to-Proceed dated December 6, 2004. This report summarizes previous work performed at the site, presents the results of the current investigation, and discusses PBS' conclusions based on these results.

### 1.1 Site Description

The subject property is located in South Seattle in an industrialized area east of the Duwamish River. The property is at an elevation of approximately 14 feet above mean sea level. The site is bound by East Marginal Way South on the west, South Alaska Street on the north, South Hudson Street on the south, and Ohio Street South (vacated) on the east. The subject property is level, but the regional topography has a gentle downgradient slope toward the west.

### 1.2 Geology/Hydrogeology

The subject property is located in the Puget Sound Basin. The Puget Sound Basin was partially filled with thick accumulations of sand, gravel and till by at least four separate periods of glaciation within the past two million years. Periods of glaciation were followed by lacustrine, alluvial, and marine deposition of clay, silt, sand, gravel, and peat.

The findings of the current investigation indicate that subsurface soils are typically homogenous, and consist of a mix of sand and silty sand encountered down to the deepest boring of 12 feet below ground surface (bgs). Groundwater was encountered at depths ranging from 8 feet to 11 feet bgs. Although the local topography is relatively level, tidal fluctuations in the Duwamish River may control groundwater flow direction in localized areas.

No surface water was observed at the time of the site visit. The nearest surface water is the Duwamish River, located approximately 0.20 mile to the west.

## 2.0 PREVIOUS INVESTIGATIONS

### Phase One Environmental Site Assessment (PBS), November 2004

PBS conducted a Phase One Environmental Site Assessment of the subject property in November 2004. The historical review revealed that the site had been developed from around 1920 to the early 1940s with four manufacturing companies: Peters Paint Manufacturing, Washington Liquid Gas Company, West Coast Kalsomine Company, and Woodruff Boyce Seed



Company and subsequent warehouse. By the 1950s, the buildings had been removed with the exception of the former liquid gas office building, which remained onsite until the late 1960s. By 1970, all of the buildings had been removed, and the property has been used as a paved parking lot through the present.

Past industrial and manufacturing use of the subject property posed a high environmental concern to the site, based on the potential for the generation of waste products and impacts to subsurface soils and/or groundwater. A Phase II Environmental Site Assessment was recommended to evaluate potential onsite environmental impacts from the historical usage of the property

### **3.0 PURPOSE AND SCOPE**

The purpose of this investigation was to assess soils and/or groundwater in the vicinity of the former manufacturing businesses for potential environmental impact from historical usage of the property. The scope of work completed by PBS consisted of the following:

- 1) Field-locate sampling locations based on possible sources of environmental contamination related to historic usage as various manufacturing businesses.
- 2) Using a direct-push sampler, collect soil samples from twelve (12) boreholes located in various locations on the property (Figure 2).
- 3) Complete a report, which includes a description of the fieldwork, methods, observations, results of the analytical testing with laboratory reports and sample chain-of-custody documentation, and interpretation of the results.

### **4.0 FIELD METHODS**

Field work was conducted following PBS' standard Health and Safety Policies and Procedures. A utility locate was requested from the One-Call public locate system, and a private locator further verified markings in the vicinity of drilling locations. All marked underground utility locations were carefully inspected prior to start of work.

On December 14, 2004, PBS directed a soil probe investigation on the subject property. The soil probes were completed by ESN of Lacey, Washington, using a truck-mounted direct-push soil-sampling unit.

Twelve borings were advanced in the locations shown on the attached soil boring location plan (Figure 2). Ten borings were advanced to a typical depth of 12 feet bgs, and two borings advanced to 8 feet bgs. Continuous sampling was completed by driving a 2-inch diameter stainless steel solid barrel sampler through the entire drilled horizon in each boring. Soil samples were collected in 4-ounce jars from 4-foot Macro-core solid barrel samplers that were lined with

PVC sleeves.

The unconfined water table was intercepted in ten of the borings at depths ranging from 8 feet to 11 feet bgs. Groundwater grab samples were collected utilizing a syringe pump and tubing inserted through the screened interval of the saturated zone. Water samples were collected in 40-milliliter zero-headspace glass vials. All sampling tools were decontaminated between samples to prevent sample cross contamination.

Soils were logged in each boring using ASTM/Unified Soil Classification System techniques; environmental parameters were also logged in each boring interval. Soils were field-screened for evidence of petroleum contamination and volatile organics at appropriate intervals using a portable photoionization detector (PID), as well as visual and olfactory screening. All samples were cooled in an iced cooler until released to the project laboratory within the holding time for the specified constituents.

Samples were transported to Advanced Analytical in Redmond, Washington, with chain-of-custody documentation. Analysis was completed for Total Petroleum Hydrocarbon Identification Screen (NWTPH-HCID); Total Petroleum Hydrocarbons-Gasoline Extended (NWTPH-Gx); Total Petroleum Hydrocarbons-Diesel Extended (NWTPH-Dx); Volatile organic compounds (VOCs) and ketones (EPA Method 8260); Semivolatiles (EPA Method 8270); and RCRA 8 total metals for soils (lead, chromium, cadmium, arsenic, mercury, selenium, barium, and silver). The laboratory filtered groundwater samples prior to analysis for dissolved metals. All analyses were performed within the holding time for the specified constituents.

Upon completion of sampling, borings were filled with bentonite and the surface sealed with asphalt patch. No wastes were generated that required disposal.

Graphic logs of subsurface soil conditions are presented in Appendix A; copies of all laboratory reports and sample chain-of-custody forms are presented in Appendix B. Results of testing are discussed below, and are also presented in Tables 1 and 2.

## 5.0 FINDINGS

Underlying soil profiles on the subject property were generally similar in all 12 of the boreholes. Soil types consisted of a mix of sand and silty sand encountered down to the deepest boring of 12 feet below ground surface. Groundwater was encountered in ten of the borings (See Exploratory Boring Logs in Appendix A).

The soil sample results are presented in Table 1. Samples from soil borings SB-1 through SB-9, and SB-11 through SB-12 contained no detectable gasoline or diesel-range petroleum hydrocarbons. Soil boring SB-10 (4'-5'), located in the vicinity of the former liquid gas manufacturer, had a concentration of heavy oil of 240 mg/kg. The Model Toxics Control Act



(MTCA) Method A Cleanup Level for diesel range organics, heavy oil and kerosene in soils is 2,000 mg/kg. A selected number of soil borings (SB-1, SB-5, SB-6, SB-7, and SB-10) contained no detectable concentrations of volatiles or semivolatiles.

Samples SB-1 (6'-8'), SB-2 (4'-6'), SB-4 (3'-4'), SB-6 (7'-8'), SB-9 (4'-5'), and SB-12 (4'-5') contained no detectable concentrations of metals. SB-3 (7'-8') had detectable concentrations of lead (2.5 mg/kg), chromium (7.6 mg/kg), and arsenic (2.8 mg/kg). SB-5 (7'-8') contained chromium (4.9 mg/kg), SB-7 (3'-4') contained lead (1.3 mg/kg), SB-7 (7'-9') contained chromium (2.1 mg/kg), SB-8 (4'-5') contained lead (8.1 mg/kg), SB-10 (4'-5') contained lead (4.1 mg/kg), and SB-11 (4'-5') contained lead (1.1 mg/kg). All of the concentrations are below the regulatory cleanup levels, and are likely background concentrations, given the industrial and manufacturing businesses in the subject vicinity.

The groundwater sample results are presented in Table 2. Groundwater samples GW-1 and GW-3 through GW-7 contained no detectable gasoline or diesel-range petroleum hydrocarbons. GW-2, located in the northeast corner of the property, contained 110 micrograms per liter (ug/l) gasoline, 1.9 ug/l ethylbenzene, and 4.0 ug/l xylenes. GW-1 contained no detectable concentrations of metals. GW-2 contained 6 ug/l lead and 0.01 ug/l chromium. GW-3 contained 3 ug/l lead; GW-4 contained 6 ug/l lead, GW-5 contained 4 ug/l lead and 0.02 ug/l chromium. All of the concentrations are well below the MTCA Method A Cleanup Levels for Groundwater (see Table 2). GW-6 (from soil boring SB-7 located in the northeast corner of the property) contained 25 ug/l lead, which is above the regulatory cleanup level of 15 ug/l for groundwater. The overlying soil intervals either contained no detectable lead, or lead was present below cleanup levels; therefore the concentration of lead in the groundwater appears to be a localized condition.

A selected number of groundwater samples (GW-1, GW-5, and GW-6) contained no detectable concentrations of volatiles or semivolatiles.

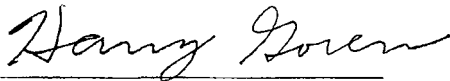
## 6.0 CONCLUSIONS

Field observations combined with the laboratory results suggest that no petroleum or metals-impacted soils above regulatory cleanup levels exist on the areas explored. With the exception of one sample, no petroleum or metals-impacted groundwater above regulatory cleanup levels exist on the areas explored. The groundwater sample (GW-6) contained a slightly elevated lead concentration and is likely a localized condition, and not indicative of widespread surrounding subsurface conditions. Based on these findings, no further investigation is recommended.

## 7.0 LIMITATIONS

PBS has prepared this report for use by General Services Administration. This report is not intended for use by others without the written consent of PBS. Our interpretation of subsurface conditions in this study was based on field observations and analytical data from the indicated explorations. Other regulated substances may exist in portions of the site that were not explored or analyzed.

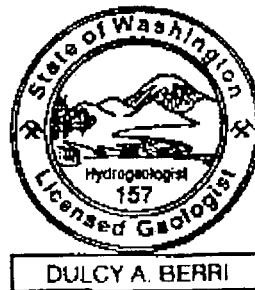
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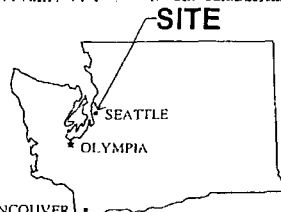
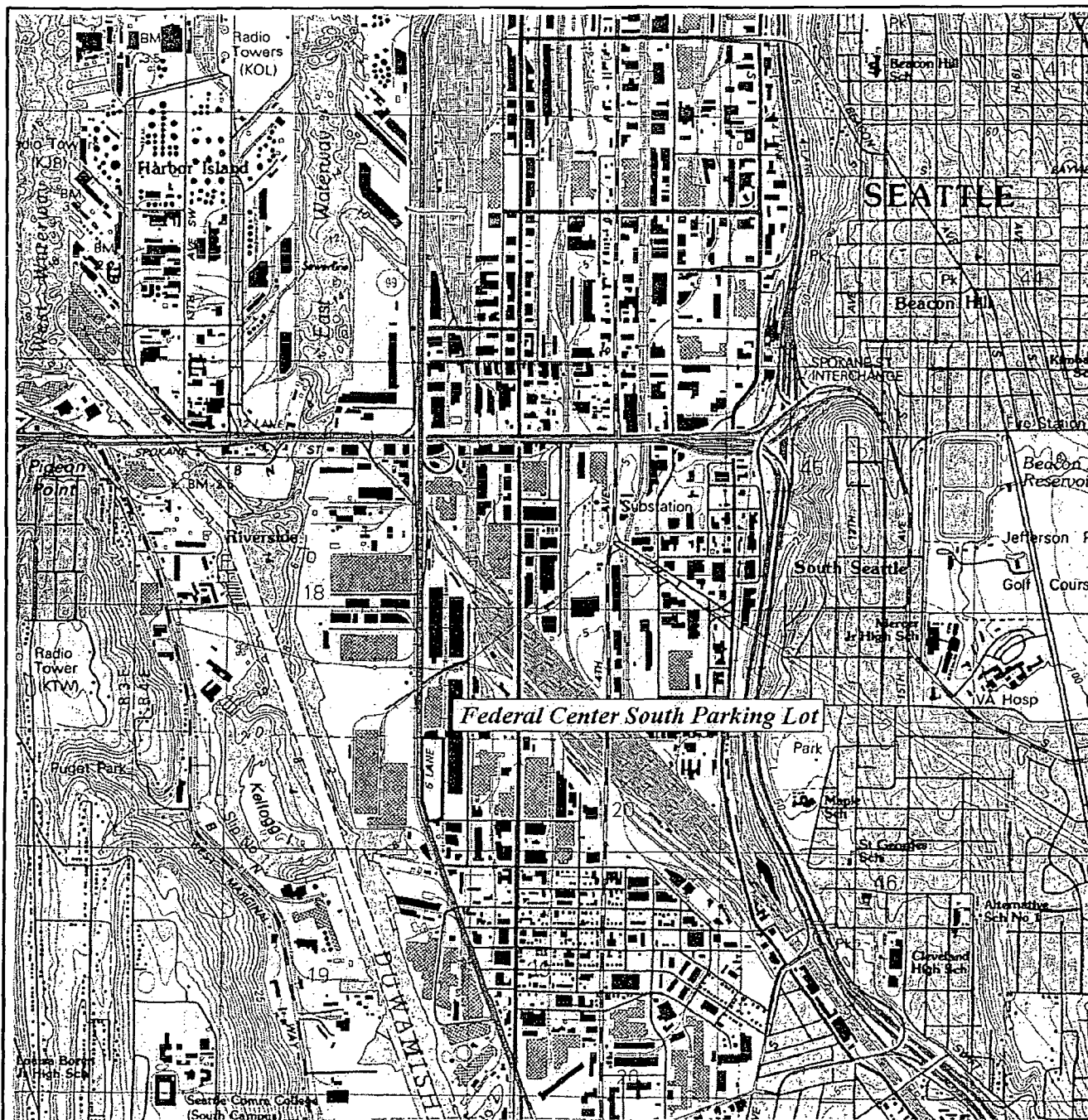
Harry Goren  
Project Manager



Dulcy Berri, L.H.G.  
Principal/Senior Hydrogeologist







SOURCE: USGS SEATTLE SOUTH QUADRANGLE, WA. 1983

Prepared for: GSA



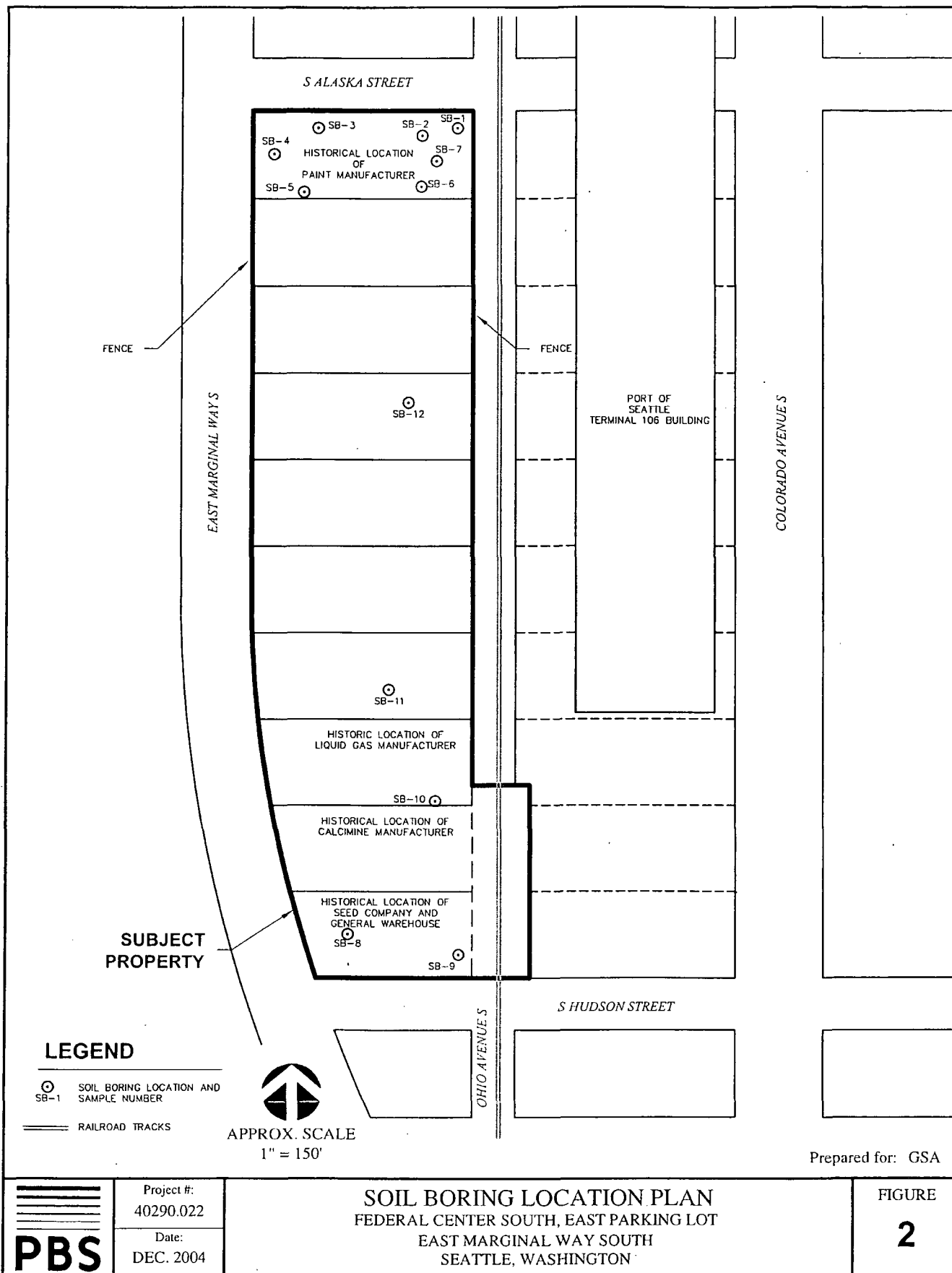
Project #:  
40290.022  
Date:  
DEC. 2004

**SITE LOCATION MAP**  
FEDERAL CENTER SOUTH, EAST PARKING LOT  
EAST MARGINAL WAY SOUTH  
SEATTLE, WASHINGTON

**FIGURE**  
**1**

12/27/04 08:55 P: \40000\40290\40290.022\40290.022\_boring\_locations.dwg

12/27/04 08:55 P: \\40000\40290\40290.022\40290.022\_boring\_locations.dwg



Project #:  
40290.022  
Date:  
DEC. 2004

Table 1: Laboratory Results - Soil Federal Center South Parking Lot along East Marginal Way South Seattle, WA																			
PBS Project #40290.022 Phase Two																			
Sample Analyses																			
Sample ID		NWTPH-Dx (mg/kg)			NWTPH-Gx/BTEX(mg/kg)						NWTPH-HCID (mg/kg)						RCRA 8 Metals <sup>(2)</sup> (mg/kg)	Volatiles 8260B <sup>(4)</sup> (mg/kg)	Semi Volatiles 8270 <sup>(4)</sup>
Number	Depth	Diesel/ Fuel oil	Heavy Oil	Kerosene	Gasoline	Mineral Spirits	Benzene	Toluene	Ethyl- benzene	Xylenes	Gasoline	Mineral Spirits	Kerosene	Diesel/ Fuel oil	Bunker C	Heavy Oil			
SB-1	6'-8'	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	(2)	ND	ND
SB-2	4'-6'	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	(2)	-	-
SB-3	3'-4'				-	-	-	-	-	-	ND	ND	ND	ND	ND	ND	-	-	-
SB-3	7'-8'	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	(2)	-	-
SB-4	3'-4'				-	-	-	-	-	-	ND	ND	ND	ND	ND	ND	(2)	-	-
SB-4	7'-8'				-	-	-	-	-	-	ND	ND	ND	ND	ND	ND	(3)	-	-
SB-5	3'-4'				-	-	-	-	-	-	ND	ND	ND	ND	ND	ND	-	-	-
SB-5	7'-8'	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	(2)	ND	-
SB-6	3'-4'				-	-	-	-	-	-	ND	ND	ND	ND	ND	ND	-	-	-
SB-6	7'-8'	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	(2)	ND	ND
SB-7	3'-4'	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	(2)	ND	-
SB-7	7'-9'	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	(2)	ND	-
SB-8	4'-5'				-	-	-	-	-	-	ND	ND	ND	ND	ND	ND	(3)	-	-
SB-8	9'-10'				-	-	-	-	-	-	ND	ND	ND	ND	ND	ND	(3)	-	-
SB-9	4'-5'				-	-	-	-	-	-	ND	ND	ND	ND	ND	ND	(3)	-	-
SB-9	9'-10'				-	-	-	-	-	-	ND	ND	ND	ND	ND	ND	-	-	-
SB-10	4'-5'	ND	240	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	(2)	ND	-
SB-10	9'-10'				-	-	-	-	-	-	ND	ND	ND	ND	ND	ND	-	-	-
SB-11	4'-5'				-	-	-	-	-	-	ND	ND	ND	ND	ND	ND	(3)	-	-
SB-12	4'-5'				-	-	-	-	-	-	ND	ND	ND	ND	ND	ND	(3)	-	-
Laboratory Detection Limits		20	30	30	5.0	5.0	.02	.05	.05	.05	20	20	20	50	50	100	(2)	(4)	(4)
MTCA Method A Cleanup Level <sup>(1)</sup>		2000	2000	2000	100	100	0.03	7	6	9	100	100	2000	2000	2000	2000	(2)	(4)	(4)

(1) Method A Cleanup Levels for Industrial Properties - Soils

(2) Lead, Chromium, Cadmium, Arsenic, Barium, Silver, Selenium, Mercury (Respective metals either non-detect or below Cleanup Levels-see lab report)

(3) Lead only analyzed (all non-detect or below Cleanup Level-see lab report)

(4) See lab report for constituents (all non-detect)

mg/kg Milligrams per kilogram

ND Not detected above laboratory detection limit

- Not analyzed

Table 2: Laboratory Results - Groundwater Federal Center South Parking Lot along East Marginal Way South Seattle, WA																			
PBS Project #40290.022 Phase Two																			
Sample Analyses																			
Sample ID		NWTPH-Dx (ug/l)			NWTPH-Gx/BTEX(ug/l)						NWTPH-HCID (ug/l)						RCRA 8 Metals <sup>(2)</sup> (mg/kg)	Volatiles 8260B <sup>(5)</sup> (ug/l)	Semi Volatiles 8270 <sup>(5)</sup>
Number	Screened Interval	Diesel/ Fuel oil	Heavy Oil	Kerosene	Gasoline	Mineral Spirits	Benzene	Toluene	Ethyl- benzene	Xylenes	Gasoline	Mineral Spirits	Kerosene	Diesel/ Fuel oil	Bunker C	Heavy Oil			
GW-1 (SB-1)	8'-12'	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	ND	ND	ND
GW-2 (SB-2)	8'-12'	ND	ND	ND	110	ND	ND	ND	1.9	4.0	-	-	-	-	-	-	(2)	-	-
GW-3 (SB-3)	9'-12'	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	(2)	-	-
GW-4 (SB-5)	9'-12'	-	-	-	-	-	-	-	-	-	ND	ND	ND	ND	ND	ND	(4)	-	-
GW-5 (SB-6)	8'-12'	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	(2)	ND	ND
GW-6 (SB-7)	10'-12'	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	(3)	ND	-
GW-7 (SB-8)	11'-12'	-	-	-	-	-	-	-	-	-	ND	ND	ND	ND	ND	ND	(4)	-	-
Laboratory Detection Limits		200	500	200	100	100	1.0	1.0	1.0	1.0	200	200	200	500	500	500	(2)	(4)	(4)
MTCA Method A Cleanup Level <sup>(1)</sup>		500	500	500	1000	1000	5	1000	700	1000	1000	1000	500	500	500	500			

<sup>(1)</sup> Method A Cleanup Levels for Groundwater

<sup>(2)</sup> Lead, Chromium, Cadmium, Arsenic, Barium, Silver, Selenium, Mercury (GW-2, GW-3, and GW-5 were non-detect or contained metals below Cleanup Levels)

<sup>(3)</sup> GW-6 contained 25 ug/l dissolved lead (Cleanup Level is 15 ug/l)

<sup>(4)</sup> Lead only analyzed (GW-4 contained 6 ug/l dissolved lead and GW-7 was non-detect)

<sup>(5)</sup> See lab report for constituents (all non-detect)

ug/l Micrograms per liter

ND Not detected above laboratory detection limit

- Not analyzed



130 NICKERSON STREET  
SUITE 107  
SEATTLE, WASHINGTON  
98109  
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(206) 762-4780

## Bore Hole/Well Construction Log

Project Number:  
40290.022

Boring/Well Number:  
SB-1

Sheet  
1 of 1

Project Name: FEDERAL CENTER SOUTH PARKING LOT  
Project Location: E MARGINAL WAY S  
Driller/Equipment: ESN/STRATAPROBE  
Geologist/Engineer: HARRY GOREN  
Sample Method: DIRECT PUSH

TOC Elevation (feet above datum): N/A  
Surface Elevation (feet above datum): N/A  
Start/End Date: 12/14/04  
Hole Depth: 12 FEET  
Outer Hole Diameter: 2 INCHES

Depth (feet, BGS)	Well Construction Details	Sample Data			Blows/ft.	Lithologic Column	Soil Description
		Sample Interval	PID Reading (ppm)	Sample Number			
1							0-6": ASPHALT.
2							6"-1': SAND with gravels.
3							1'-4': Silty SAND, no gravels.
4							
5							4'-8': Medium brown to dark gray silty SAND, dry, no odor.
6							
7							
8							8'-12': Wet, medium gray, silty SAND.
9							
10							
11							
12							
13							BOTTOM OF HOLE
14							
15							PID not used; raining.
16							
17							
18							
19							
20							

▼  
(GW-1)  
SCREEN 8'-12'

24' WEST OF EAST FENCE AND 14' SOUTH OF NORTH FENCE.

### NOTES

- SOIL INTERFACES AND DESCRIPTIONS ARE INTERPRETIVE AND ACTUAL CHANGES AND TRANSITIONS MAY BE GRADUAL.
- WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.
- SOIL DESCRIPTIONS NOT INTENDED TO BE USED FOR GEOTECHNICAL DESIGN PURPOSES.

# SB-1



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## Bore Hole/Well Construction Log

Project Number:  
40290.022

Boring/Well Number:  
SB-1

Sheet  
1 of 1

Project Name: FEDERAL CENTER SOUTH PARKING LOT  
Project Location: E MARGINAL WAY S  
Driller/Equipment: ESN/STRATAPROBE  
Geologist/Engineer: HARRY GOREN  
Sample Method: DIRECT PUSH

TOC Elevation (feet above datum): N/A  
Surface Elevation (feet above datum): N/A  
Start/End Date: 12/14/04  
Hole Depth: 12 FEET  
Outer Hole Diameter: 2 INCHES

Depth (feet, BGS)	Well Construction Details	Sample Data				Lithologic Column	Soil Description
		Sample Interval	PID Reading (ppm)	Sample Number	Blows/ft.		
1							0-6": ASPHALT.
2			N/A				6"-1': Well-graded SANDS with gravel.
3							1'-4': Silty SAND, no gravels, no odor.
4				SB-2 (4'-6')			
5							4'-8': Dark gray silty SAND, dry, no odor.
6			N/A				
7							
8							8'-9': Wet, silty SAND.
9							9'-12': Dark gray clayey SAND.
10			N/A				
11							
12							
13							BOTTOM OF HOLE
14							
15							
16							
17							
18							
19							
20							

66' WEST OF EAST FENCE AND 18' SOUTH OF NORTH FENCE.

### NOTES

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# SB-2



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## Bore Hole/Well Construction Log


Project Number:  
40290.022

Boring/Well Number:  
SB-3

Sheet  
1 of 1

Project Name: FEDERAL CENTER SOUTH PARKING LOT  
Project Location: E MARGINAL WAY S  
Driller/Equipment: ESN/STRATAPROBE  
Geologist/Engineer: HARRY GOREN  
Sample Method: DIRECT PUSH

TOC Elevation (feet above datum): N/A  
Surface Elevation (feet above datum): N/A  
Start/End Date: 12/14/04  
Hole Depth: 12 FEET  
Outer Hole Diameter: 2 INCHES

Depth (feet, BGS)	Well Construction Details	Sample Data				Lithologic Column	Soil Description	
		Sample Interval	PID Reading (ppm)	Sample Number	Blows/ ft.			
1	<div>▼ (GW-3) SCREEN 9'-12'</div>	N/A	N/A	SB-3 (3'-4')		0-6": ASPHALT.	1	
2						6"-4': Medium brown silty SAND - SAND MIXTURE, no gravel, no odor.	2	
3								3
4								4
5		N/A	N/A	SB-3 (7'-8')		4'-8': Dark brown SAND-SILT MIXTURE, dry, no odor, reddish-brown at 7'.	5	
6							6	
7							7	
8							8	
9		N/A	N/A	8'-12': medium brown silty SAND trending to dark gray.			9	
10				10'-12' moist.			10	
11				11'-12' Organic roots in silty SAND.			11	
12				BOTTOM OF HOLE			12	
13						13		
14						14		
15						15		
16						16		
17						17		
18						18		
19						19		
20						20		

### NOTES

- SOIL INTERFACES AND DESCRIPTIONS ARE INTERPRETIVE AND ACTUAL CHANGES AND TRANSITIONS MAY BE GRADUAL.
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- SOIL DESCRIPTIONS NOT INTENDED TO BE USED FOR GEOTECHNICAL DESIGN PURPOSES.

# SB-3



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## Bore Hole/Well Construction Log

Project Number:  
40290.022

Boring/Well Number:  
SB-4

Sheet  
1 of 1

Project Name: FEDERAL CENTER SOUTH PARKING LOT  
Project Location: E MARGINAL WAY S  
Driller/Equipment: ESN/STRATAPROBE  
Geologist/Engineer: HARRY GOREN  
Sample Method: DIRECT PUSH

TOC Elevation (feet above datum): N/A  
Surface Elevation (feet above datum): N/A  
Start/End Date: 12/14/04  
Hole Depth: 12 FEET  
Outer Hole Diameter: 2 INCHES

Depth (feet, BGS)	Well Construction Details	Sample Data				Lithologic Column	Soil Description
		Sample Interval	PID Reading (ppm)	Sample Number	Blows/ft.		
1							0-6": ASPHALT.
2			0	SB-4 (3'-4')			6"-9": Medium brown SAND with silt, dry no odor.
3							
4							
5							
6			0	SB-4 (7'-8')			
7							
8							
9							9'-12' Wet.
10	NO SAMPLE		0				
11							11'-12' Organic roots in silty SAND.
12							BOTTOM OF HOLE
13							
14							
15							
16							
17							
18							
19							
20							

20' EAST OF WEST FENCE AND 46' SOUTH OF NORTH FENCE.

### NOTES

- SOIL INTERFACES AND DESCRIPTIONS ARE INTERPRETIVE AND ACTUAL CHANGES AND TRANSITIONS MAY BE GRADUAL.
- WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.

- SOIL DESCRIPTIONS NOT INTENDED TO BE USED FOR GEOTECHNICAL DESIGN PURPOSES.

# SB-4





130 NICKERSON STREET  
SUITE 107  
SEATTLE, WASHINGTON  
98109  
(206) 233-9639  
FAX  
(206) 762-4780

## Bore Hole/Well Construction Log

Project Number:  
40290.022

Boring/Well Number:  
SB-5

Sheet  
1 of 1

Project Name: FEDERAL CENTER SOUTH PARKING LOT  
Project Location: E MARGINAL WAY S  
Driller/Equipment: ESN/STRATAPROBE  
Geologist/Engineer: HARRY GOREN  
Sample Method: DIRECT PUSH

TOC Elevation (feet above datum): N/A  
Surface Elevation (feet above datum): N/A  
Start/End Date: 12/14/04  
Hole Depth: 12 FEET  
Outer Hole Diameter: 2 INCHES

Depth (feet, BGS)	Well Construction Details	Sample Data				Lithologic Column	Soil Description
		Sample Interval	PID Reading (ppm)	Sample Number	Blows/ ft.		
1							0-6": ASPHALT.
2			0	SB-5 (3'-4')			6"-4': Light gray SAND-SILT MIXTURE, dry, no odor.
3							
4							4'-8': light gray trending to dark brown SAND with silt, no gravel, dry, no odor.
5							
6			0	SB-5 (7'-8')			
7							
8							8'-12': Wet, dark gray silty SAND.
9							
10	▼ (GW-4) SCREEN 9'-12'		0				
11							11'-12' Silty SAND with organic roots.
12							BOTTOM OF HOLE
13							
14							
15							
16							
17							
18							
19							
20							

100' SOUTH OF NORTH FENCE AND 53' EAST OF WEST FENCE.

### NOTES

- SOIL INTERFACES AND DESCRIPTIONS ARE INTERPRETIVE AND ACTUAL CHANGES AND TRANSITIONS MAY BE GRADUAL.
- WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.
- SOIL DESCRIPTIONS NOT INTENDED TO BE USED FOR GEOTECHNICAL DESIGN PURPOSES.

# SB-5



130 NICKERSON STREET  
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FAX  
(206) 762-4780

## Bore Hole/Well Construction Log

Project Number:  
40290.022

Boring/Well Number:  
SB-6

Sheet  
1 of 1

Project Name: FEDERAL CENTER SOUTH PARKING LOT  
Project Location: E MARGINAL WAY S  
Driller/Equipment: ESN/STRATAPROBE  
Geologist/Engineer: HARRY GOREN  
Sample Method: DIRECT PUSH

TOC Elevation (feet above datum): N/A  
Surface Elevation (feet above datum): N/A  
Start/End Date: 12/14/04  
Hole Depth: 12 FEET  
Outer Hole Diameter: 2 INCHES

Depth (feet, BGS)	Well Construction Details	Sample Data				Lithologic Column	Soil Description
		Sample Interval	PID Reading (ppm)	Sample Number	Blows/ft.		
1	<div>▼ (GW-5) SCREEN 8'-12'</div>						0-6": ASPHALT.
2			0	SB-6 (3'-4')			6"-4': Medium gray SAND with silt mixture, dry, no odor.
3							
4							
5							4'-8': Silty SAND, dark brown trending to dark gray, dry, no odor.
6			0	SB-6 (7'-8')			
7							
8							8'-9': Dark brown silty SAND, dry.
9							9'-12': Wet, silty SAND.
10			0				
11							11'-12': Silty SAND with organic roots.
12							BOTTOM OF HOLE
13							
14							
15							
16							
17							
18							
19							
20							

65' WEST OF EAST FENCE AND 95' SOUTH OF NORTH FENCE.

### NOTES

- SOIL INTERFACES AND DESCRIPTIONS ARE INTERPRETIVE AND ACTUAL CHANGES AND TRANSITIONS MAY BE GRADUAL.
- WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.
- SOIL DESCRIPTIONS NOT INTENDED TO BE USED FOR GEOTECHNICAL DESIGN PURPOSES.

# SB-6



130 NICKERSON STREET  
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## Bore Hole/Well Construction Log

Project Number:  
40290.022

Boring/Well Number:  
SB-7

Sheet  
1 of 1

Project Name: FEDERAL CENTER SOUTH PARKING LOT  
Project Location: E MARGINAL WAY S  
Driller/Equipment: ESN/STRATAPROBE  
Geologist/Engineer: HARRY GOREN  
Sample Method: DIRECT PUSH

TOC Elevation (feet above datum): N/A  
Surface Elevation (feet above datum): N/A  
Start/End Date: 12/14/04  
Hole Depth: 12 FEET  
Outer Hole Diameter: 2 INCHES

Depth (feet, BGS)	Well Construction Details	Sample Data				Lithologic Column	Soil Description
		Sample Interval	PID Reading (ppm)	Sample Number	Blows/ft.		
1							0-6": ASPHALT.
2			0	SB-7 (3'-4')			6"-8": Dark brown SAND with silt, no gravel, no odor.
3							
4							
5							
6			0	SB-7 (7'-9')			
7							
8							8'-9": Dry, dark gray silty SAND.
9							9'-11.5": Wet, dark gray.
10	▼ (GW-6) SCREEN 10'-12'		0				
11							11.5'-12": Dry, silty SAND.
12							BOTTOM OF HOLE
13							
14							
15							
16							
17							
18							
19							
20							

44' WEST OF EAST FENCE AND 58' SOUTH OF NORTH FENCE.

### NOTES

- SOIL INTERFACES AND DESCRIPTIONS ARE INTERPRETIVE AND ACTUAL CHANGES AND TRANSITIONS MAY BE GRADUAL.
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- SOIL DESCRIPTIONS NOT INTENDED TO BE USED FOR GEOTECHNICAL DESIGN PURPOSES.

# SB-7



130 HICKERSON STREET  
SUITE 107  
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98109

(206) 233-9639

FAX  
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## Bore Hole/Well Construction Log

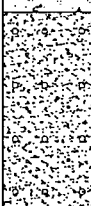
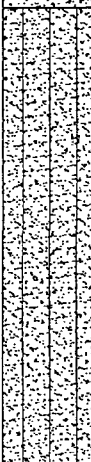

Project Number:  
40290.022

Boring/Well Number:  
SB-8

Sheet  
1 of 1

Project Name: FEDERAL CENTER SOUTH PARKING LOT  
Project Location: E MARGINAL WAY S  
Driller/Equipment: ESN/STRATAPROBE  
Geologist/Engineer: HARRY GOREN  
Sample Method: DIRECT PUSH

TOC Elevation (feet above datum): N/A  
Surface Elevation (feet above datum): N/A  
Start/End Date: 12/14/04  
Hole Depth: 12 FEET  
Outer Hole Diameter: 2 INCHES

Depth (feet, BGS)	Well Construction Details	Sample Data				Lithologic Column	Soil Description						
		Sample Interval	PID Reading (ppm)	Sample Number	Blows/ft.								
1	<div>▼ (GW-7) SCREEN 11'-12'</div>		0	SB-8 (4'-5')		0-6": ASPHALT.	1						
2						6"-4': well-graded SAND with gravels, light brown, dry, no odor.	2						
3							3						
4							4						
5						0	SB-8 (9'-10')		4'-8': Medium brown silty SANDS with fines, no odor.	5			
6										6			
7										7			
8										8			
9									0			8'-12': Dry, dark brown, silty SAND.	9
10													10
11				11									
12			11'-12': Damp.	12									
13			BOTTOM OF HOLE		13								
14				14									
15				15									
16				16									
17				17									
18				18									
19				19									
20				20									

39' EAST OF WEST FENCE AND 56' NORTH OF SOUTH FENCE.

### NOTES

1. SOIL INTERFACES AND DESCRIPTIONS ARE INTERPRETIVE AND ACTUAL CHANGES AND TRANSITIONS MAY BE GRADUAL.
2. WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.

3. SOIL DESCRIPTIONS NOT INTENDED TO BE USED FOR GEOTECHNICAL DESIGN PURPOSES.

# SB-8



130 NICKERSON STREET  
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## Bore Hole/Well Construction Log

Project Number:  
40290.022

Boring/Well Number:  
SB-9

Sheet  
1 of 1

Project Name: FEDERAL CENTER SOUTH PARKING LOT  
Project Location: E MARGINAL WAY S  
Driller/Equipment: ESN/STRATAPROBE  
Geologist/Engineer: HARRY GOREN  
Sample Method: DIRECT PUSH

TOC Elevation (feet above datum): N/A  
Surface Elevation (feet above datum): N/A  
Start/End Date: 12/14/04  
Hole Depth: 12 FEET  
Outer Hole Diameter: 2 INCHES

Depth (feet, BGS)	Well Construction Details	Sample Data				Lithologic Column	Soil Description
		Sample Interval	PID Reading (ppm)	Sample Number	Blows/ft.		
1							0-6": ASPHALT.
2			0				6"-1.5': Pulverized ROCK.
3							1.5'-11.5': Dark brown silty SAND, dry, no odor.
4				SB-9 (4'-5')			
5							
6			0				
7							
8							
9				SB-9 (9'-10')			
10			0				
11							11.5'-12': Damp.
12	NO SAMPLE						BOTTOM OF HOLE
13							
14							
15							
16							
17							
18							
19							
20							

19' WEST OF SOUTH ENTRANCE GATE AND 29' NORTH OF SOUTH FENCE.

### NOTES

- SOIL INTERFACES AND DESCRIPTIONS ARE INTERPRETIVE AND ACTUAL CHANGES AND TRANSITIONS MAY BE GRADUAL
- WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.

- SOIL DESCRIPTIONS NOT INTENDED TO BE USED FOR GEOTECHNICAL DESIGN PURPOSES.

# SB-9



130 NICKERSON STREET  
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## Bore Hole/Well Construction Log

Project Number:  
40290.022

Boring/Well Number:  
SB-10

Sheet  
1 of 1

Project Name: FEDERAL CENTER SOUTH PARKING LOT  
Project Location: E MARGINAL WAY S  
Driller/Equipment: ESN/STRATAPROBE  
Geologist/Engineer: HARRY GOREN  
Sample Method: DIRECT PUSH

TOC Elevation (feet above datum): N/A  
Surface Elevation (feet above datum): N/A  
Start/End Date: 12/14/04  
Hole Depth: 12 FEET  
Outer Hole Diameter: 2 INCHES

Depth (feet, BGS)	Well Construction Details	Sample Data				Lithologic Column	Soil Description
		Sample Interval	PID Reading (ppm)	Sample Number	Blows/ft.		
1	NO SAMPLE ▼						0-6": ASPHALT.
2			0				6"-12': Dark brown silty SAND, dry, no odor.
3							
4				SB-10 (4'-5')			
5							
6			0				
7							
8							
9				SB-10 (9'-10')			
10			0				
11							
12							
13							BOTTOM OF HOLE
14							Advanced hydropunch (pointed stainless steel screen) to 14' - no water production.
15							
16							
17							
18							
19							
20							

55' WEST OF EAST FENCE AND 225' NORTH OF SOUTH FENCE.

### NOTES

- SOIL INTERFACES AND DESCRIPTIONS ARE INTERPRETIVE AND ACTUAL CHANGES AND TRANSITIONS MAY BE GRADUAL.
- WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.
- SOIL DESCRIPTIONS NOT INTENDED TO BE USED FOR GEOTECHNICAL DESIGN PURPOSES.

# SB-10



130 HICKERSON STREET  
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98109  
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FAX  
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## Bore Hole/Well Construction Log

Project Number:  
40290.022

Boring/Well Number:  
SB-11

Sheet  
1 of 1

Project Name: FEDERAL CENTER SOUTH PARKING LOT  
Project Location: E MARGINAL WAY S  
Driller/Equipment: ESN/STRATAPROBE  
Geologist/Engineer: HARRY GOREN  
Sample Method: DIRECT PUSH

TOC Elevation (feet above datum): N/A  
Surface Elevation (feet above datum): N/A  
Start/End Date: 12/14/04  
Hole Depth: 8 FEET  
Outer Hole Diameter: 2 INCHES

Depth (feet, BGS)	Well Construction Details	Sample Data				Lithologic Column	Soil Description
		Sample Interval	PID Reading (ppm)	Sample Number	Blows/ft.		
1							0-6": Pulverized CONCRETE.
2			0				6"-8": Dark brown, silty SAND, dry, no odor.
3							
4				SB-11 (4'-5')			
5							
6			0				
7							
8							
9							BOTTOM OF HOLE
10			0				No groundwater encountered to completed depth of hole.
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

115' WEST OF EAST FENCE AND 340' NORTH OF SOUTH FENCE.

### NOTES

- SOIL INTERFACES AND DESCRIPTIONS ARE INTERPRETIVE AND ACTUAL CHANGES AND TRANSITIONS MAY BE GRADUAL.
- WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.
- SOIL DESCRIPTIONS NOT INTENDED TO BE USED FOR GEOTECHNICAL DESIGN PURPOSES.

# SB-11



130 NICKERSON STREET  
SUITE 107  
SEATTLE, WASHINGTON  
98109

(206) 233-9639

FAX  
(206) 762-4780

## Bore Hole/Well Construction Log

Project Number:  
40290.022

**BOTTOM OF HOLE**  
SB-12

Sheet  
1 of 1

Project Name: **FEDERAL CENTER SOUTH PARKING LOT**  
Project Location: **E MARGINAL WAY S**  
Driller/Equipment: **ESN/STRATAPROBE**  
Geologist/Engineer: **HARRY GOREN**  
Sample Method: **DIRECT PUSH**

TOC Elevation (feet above datum): N/A  
Surface Elevation (feet above datum): N/A  
Start/End Date: **12/14/04**  
Hole Depth: **8 FEET**  
Outer Hole Diameter: **2 INCHES**

Depth (feet, BGS)	Well Construction Details	Sample Data				Lithologic Column	Soil Description
		Sample Interval	PID Reading (ppm)	Sample Number	Blows/ft.		
1							0-6": ASPHALT.
2			0				6"-8": Dark brown, silty SAND, dry, no odor.
3							
4				SB-12 (4'-5')			
5							
6			0				
7							
8							
9							<b>BOTTOM OF HOLE</b>
10			0				No groundwater encountered to completed depth of hole.
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

93' WEST OF EAST FENCE AND 666' NORTH OF SOUTH FENCE.

### NOTES

- SOIL INTERFACES AND DESCRIPTIONS ARE INTERPRETIVE AND ACTUAL CHANGES AND TRANSITIONS MAY BE GRADUAL.
- WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.
- SOIL DESCRIPTIONS NOT INTENDED TO BE USED FOR GEOTECHNICAL DESIGN PURPOSES.

# SB-12



AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results

NWTPH-Gx/BTEX		MTH BLK	LCS	SB1 6-8	SB2 4-6	SB3 7-8	SB5 7-8	SB6 7-8
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04
Date analyzed	Limits	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04

NWTPH-Gx, mg/kg

Mineral spirits/Stoddard	5.0	nd		nd	nd	nd	nd	nd
Gasoline	5.0	nd		nd	nd	nd	nd	nd

BTEX, µg/kg

Benzene	20	nd	80%	nd	nd	nd	nd	nd
Toluene	50	nd	82%	nd	nd	nd	nd	nd
Ethylbenzene	50	nd		nd	nd	nd	nd	nd
Xylenes	50	nd		nd	nd	nd	nd	nd

Surrogate recoveries:

Trifluorotoluene	107%	118%	126%	122%	122%	114%	118%
Bromofluorobenzene	108%	119%	111%	109%	113%	103%	106%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

C - coelution with sample peaks

M - matrix interference

J - estimated value

Results reported on dry-weight basis

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results		Dupl					MS
NWTPH-Gx/BTEX		MTH BLK	SB7 3-4	SB7 7-9	SB10 4-5	SB10 4-5	SB1 6-8
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04
Date analyzed	Limits	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04

**NWTPH-Gx, mg/kg**

Mineral spirits/Stoddard	5.0	nd	nd	nd	nd	nd	
Gasoline	5.0	nd	nd	nd	nd	nd	

**BTEX, µg/kg**

Benzene	20	nd	nd	nd	nd	nd	112%
Toluene	50	nd	nd	nd	nd	nd	114%
Ethylbenzene	50	nd	nd	nd	nd	nd	
Xylenes	50	nd	nd	nd	nd	nd	

**Surrogate recoveries:**

Trifluorotoluene	107%	114%	116%	116%	99%	120%
Bromofluorobenzene	108%	102%	105%	106%	104%	113%

**Data Qualifiers and Analytical Comments**

nd - not detected at listed reporting limits  
na - not analyzed  
C - coelution with sample peaks  
M - matrix interference  
J - estimated value  
Results reported on dry-weight basis  
Acceptable Recovery limits: 70% TO 130%  
Acceptable RPD limit: 30%

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results		MSD		RPD
NWTPH-Gx/BTEX		MTH BLK	SB1 6-8	SB1 6-8
Matrix	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/15/04	12/15/04	12/15/04
Date analyzed	Limits	12/15/04	12/15/04	12/15/04

**NWTPH-Gx, mg/kg**

Mineral spirits/Stoddard	5.0	nd		
Gasoline	5.0	nd		

**BTEX, µg/kg**

Benzene	20	nd	90%	22%
Toluene	50	nd	88%	26%
Ethylbenzene	50	nd		
Xylenes	50	nd		

**Surrogate recoveries:**

Trifluorotoluene	107%	105%		
Bromofluorobenzene	108%	106%		

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

C - coelution with sample peaks

M - matrix interference

J - estimated value

Results reported on dry-weight basis

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results

NWTPH-Gx / BTEX		MTH BLK	LCS	GW-1 (SB-1)	GW-2 (SB-2)	GW-3 (SB-3)
Matrix	Water	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04

NWTPH-Gx, mg/L

Mineral spirits/Stoddard	0.10	nd		nd	nd	nd
Gasoline	0.10	nd		nd	0.11	nd

BTEX, µg/L

Benzene	1.0	nd	80%	nd	nd	nd
Toluene	1.0	nd	82%	nd	nd	nd
Ethylbenzene	1.0	nd		nd	1.9	nd
Xylenes	1.0	nd		nd	4.0	nd

Surrogate recoveries:

Trifluorotoluene	107%	118%	104%	107%	105%
Bromofluorobenzene	108%	119%	109%	112%	109%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

C - coelution with sample peaks

M - matrix interference

J - estimated value

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results				Dupl	
NWTPH-Gx / BTEX		MTH BLK	GW-5 (SB-6)	GW-6 (SB-7)	GW-6 (SB-7)
Matrix	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	12/15/04	12/15/04	12/15/04	12/15/04

NWTPH-Gx, mg/L					
Mineral spirits/Stoddard	0.10	nd	nd	nd	nd
Gasoline	0.10	nd	nd	nd	nd

BTEX, µg/L					
Benzene	1.0	nd	nd	nd	nd
Toluene	1.0	nd	nd	nd	nd
Ethylbenzene	1.0	nd	nd	nd	nd
Xylenes	1.0	nd	nd	nd	nd

Surrogate recoveries:					
Trifluorotoluene		107%	111%	112%	112%
Bromofluorobenzene		108%	117%	111%	117%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
na - not analyzed  
C - coelution with sample peaks  
M - matrix interference  
J - estimated value  
Acceptable Recovery limits: 70% TO 130%  
Acceptable RPD limit: 30%

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results

NWTPH-Dx, mg/kg		MTH BLK	SB1 6-8	SB2 4-6	SB3 7-8	SB5 7-8	SB6 7-8	SB7 3-4
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04
Date analyzed	Limits	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd	nd	nd
Diesel/Fuel oil	20	nd	nd	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	90%	92%	83%	87%	85%	88%	87%
o-Terphenyl	92%	94%	86%	88%	90%	89%	87%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

C - coelution with sample peaks

M - matrix interference

J - estimated value

Results reported on dry-weight basis

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results		Dupl			
NWTPH-Dx, mg/kg		MTH BLK	SB7 7-9	SB10 4-5	SB7 7-9
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/15/04	12/15/04	12/15/04	12/15/04
Date analyzed	Limits	12/15/04	12/15/04	12/15/04	12/15/04
Kerosene/Jet fuel	20	nd	nd	nd	nd
Diesel/Fuel oil	20	nd	nd	nd	nd
Heavy oil	50	nd	nd	240	nd

Surrogate recoveries:					
Fluorobiphenyl		90%	90%	91%	94%
o-Terphenyl		92%	91%	94%	95%

#### Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
na - not analyzed  
C - coelution with sample peaks  
M - matrix interference  
J - estimated value  
Results reported on dry-weight basis  
Acceptable Recovery limits: 70% TO 130%  
Acceptable RPD limit: 30%

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

**Analytical Results**

NWTPH-Dx, mg/l		MTH BLK	GW-1 (SB-1)	GW-2 (SB-2)	GW-3 (SB-3)	GW-5 (SB-6)
Matrix	Water	Water	Water	Water	Water	Water
Date extracted	Reporting	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04
Date analyzed	Limits	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04
Kerosene/Jet fuel	0.20	nd	nd	nd	nd	nd
Diesel/Fuel oil	0.20	nd	nd	nd	nd	nd
Heavy oil	0.50	nd	nd	nd	nd	nd

**Surrogate recoveries:**

Fluorobiphenyl	90%	83%	89%	87%	87%
o-Terphenyl	92%	87%	92%	90%	89%

**Data Qualifiers and Analytical Comments**

nd - not detected at listed reporting limits  
na - not analyzed  
C - coelution with sample peaks  
M - matrix interference  
J - estimated value  
Acceptable Recovery limits: 70% TO 130%  
Acceptable RPD limit: 30%  
Acceptable RPD limit: 30%



AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results		Dupl		
NWTPH-Dx, mg/l		MTH BLK	GW-6 (SB-7)	GW-6 (SB-7)
Matrix	Water	Water	Water	Water
Date extracted	Reporting	12/15/04	12/15/04	12/15/04
Date analyzed	Limits	12/15/04	12/15/04	12/15/04
Kerosene/Jet fuel	0.20	nd	nd	nd
Diesel/Fuel oil	0.20	nd	nd	nd
Heavy oil	0.50	nd	nd	nd

Surrogate recoveries:				
Fluorobiphenyl		90%	93%	90%
o-Terphenyl		92%	96%	107%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

C - coelution with sample peaks

M - matrix interference

J - estimated value

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

Acceptable RPD limit: 30%

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results

NWTPH-HCID, mg/kg		MTH BLK	SB3 3-4	SB4 3-4	SB4 7-8	SB5 3-4	SB6 3-4	SB8 4-5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04
Date analyzed	Limits	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04
Gasoline	20	nd	nd	nd	nd	nd	nd	nd
Stoddard/Mineral spirits	20	nd	nd	nd	nd	nd	nd	nd
Kensol	20	nd	nd	nd	nd	nd	nd	nd
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd	nd	nd
Diesel/Fuel oil	50	nd	nd	nd	nd	nd	nd	nd
Bunker C	50	nd	nd	nd	nd	nd	nd	nd
Heavy oil	100	nd	nd	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	90%	87%	89%	86%	90%	88%	88%
o-Terphenyl	92%	90%	89%	87%	99%	94%	89%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

D - detected at or above listed reporting limits

C - coelution with sample peaks

M - matrix interference

J - estimated value

Results reported on dry-weight basis

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results

NWTPH-HCID, mg/kg		MTH BLK	SB8 9-10	SB9 4-5	SB9 9-10	SB10 9-10	SB11 4-5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04
Date analyzed	Limits	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04
Gasoline	20	nd	nd	nd	nd	nd	nd
Stoddard/Mineral spirits	20	nd	nd	nd	nd	nd	nd
Kensol	20	nd	nd	nd	nd	nd	nd
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd	nd
Diesel/Fuel oil	50	nd	nd	nd	nd	nd	nd
Bunker C	50	nd	nd	nd	nd	nd	nd
Heavy oil	100	nd	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	90%	90%	88%	86%	95%	95%
o-Terphenyl	92%	91%	89%	88%	115%	95%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
D - detected at or above listed reporting limits  
C - coelution with sample peaks  
M - matrix interference  
J - estimated value  
Results reported on dry-weight basis  
Acceptable Recovery limits: 70% TO 130%  
Acceptable RPD limit: 30%

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results		Dupl		
NWTPH-HCID, mg/kg		MTH BLK	SB12 4-5	SB8 9-10
Matrix	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/15/04	12/15/04	12/15/04
Date analyzed	Limits	12/15/04	12/15/04	12/15/04
Gasoline	20	nd	nd	nd
Stoddard/Mineral spirits	20	nd	nd	nd
Kensol	20	nd	nd	nd
Kerosene/Jet fuel	20	nd	nd	nd
Diesel/Fuel oil	50	nd	nd	nd
Bunker C	50	nd	nd	nd
Heavy oil	100	nd	nd	nd

Surrogate recoveries:				
Fluorobiphenyl		90%	92%	95%
o-Terphenyl		92%	94%	96%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
D - detected at or above listed reporting limits  
C - coelution with sample peaks  
M - matrix interference  
J - estimated value  
Results reported on dry-weight basis  
Acceptable Recovery limits: 70% TO 130%  
Acceptable RPD limit: 30%

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results		Dupl			
NWTPH-HCID, mg/l		MTH BLK	GW-4 (SB-5)	GW-7 (SB-8)	GW-7 (SB-8)
Matrix	Water	Water	Water	Water	Water
Date extracted	Reporting	12/15/04	12/15/04	12/15/04	12/15/04
Date analyzed	Limits	12/15/04	12/15/04	12/15/04	12/15/04
Gasoline	0.20	nd	nd	nd	nd
Stoddard/Mineral spirits	0.20	nd	nd	nd	nd
Kensol	0.20	nd	nd	nd	nd
Kerosene/Jet fuel	0.20	nd	nd	nd	nd
Diesel/Fuel oil	0.50	nd	nd	nd	nd
Bunker C	0.50	nd	nd	nd	nd
Heavy oil	0.50	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	90%	90%	93%	104%
o-Terphenyl	92%	90%	96%	103%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
D - detected at or above listed reporting limits  
C - coelution with sample peaks  
M - matrix interference  
J - estimated value  
Acceptable Recovery limits: 70% TO 130%  
Acceptable RPD limit: 30%

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results

8260B (with Ketones), µg/kg		MTH BLK	LCS	SB1 6-8	SB5 7-8	SB6 7-8	SB7 3-4	SB7 7-9
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting Limits	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04
Date analyzed		12/15/04	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04
Dichlorodifluoromethane	50	nd		nd	nd	nd	nd	nd
Chloromethane	50	nd		nd	nd	nd	nd	nd
Vinyl chloride(*)	50	nd		nd	nd	nd	nd	nd
Bromomethane	50	nd		nd	nd	nd	nd	nd
Chloroethane	50	nd		nd	nd	nd	nd	nd
Trichlorofluoromethane	50	nd		nd	nd	nd	nd	nd
1,1-Dichloroethene	50	nd		nd	nd	nd	nd	nd
Methylene chloride	20	nd		nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd		nd	nd	nd	nd	nd
1,1-Dichloroethane	50	nd		nd	nd	nd	nd	nd
2,2-Dichloropropane	50	nd		nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd		nd	nd	nd	nd	nd
Chloroform	50	nd		nd	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd		nd	nd	nd	nd	nd
Carbontetrachloride	50	nd		nd	nd	nd	nd	nd
1,1-Dichloropropene	50	nd		nd	nd	nd	nd	nd
Benzene	50	nd	80%	nd	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd		nd	nd	nd	nd	nd
Trichloroethene	20	nd	103%	nd	nd	nd	nd	nd
1,2-Dichloropropane	50	nd		nd	nd	nd	nd	nd
Dibromomethane	50	nd		nd	nd	nd	nd	nd
Bromodichloromethane	50	nd		nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd		nd	nd	nd	nd	nd
Toluene	50	nd	101%	nd	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd		nd	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd		nd	nd	nd	nd	nd
Tetrachloroethene	50	nd		nd	nd	nd	nd	nd
1,3-Dichloropropane	50	nd		nd	nd	nd	nd	nd
Dibromochloromethane	20	nd		nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd		nd	nd	nd	nd	nd
Chlorobenzene	50	nd	98%	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd		nd	nd	nd	nd	nd
Ethylbenzene	50	nd		nd	nd	nd	nd	nd
Xylenes	50	nd		nd	nd	nd	nd	nd
Styrene	50	nd		nd	nd	nd	nd	nd
Bromoform	50	nd		nd	nd	nd	nd	nd
Isopropylbenzene	50	nd		nd	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd		nd	nd	nd	nd	nd
Bromobenzene	50	nd		nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd		nd	nd	nd	nd	nd
n-Propylbenzene	50	nd		nd	nd	nd	nd	nd
2-Chlorotoluene	50	nd		nd	nd	nd	nd	nd
4-Chlorotoluene	50	nd		nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd		nd	nd	nd	nd	nd

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results

8260B (with Ketones), µg/kg		MTH BLK	LCS	SB1 6-8	SB5 7-8	SB6 7-8	SB7 3-4	SB7 7-9
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting Limits	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04
Date analyzed		12/15/04	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04
tert-Butylbenzene	50	nd		nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd		nd	nd	nd	nd	nd
sec-Butylbenzene	50	nd		nd	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd		nd	nd	nd	nd	nd
Isopropyltoluene	50	nd		nd	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd		nd	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd		nd	nd	nd	nd	nd
n-Butylbenzene	50	nd		nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd		nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd		nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd		nd	nd	nd	nd	nd
Naphthalene	50	nd		nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd		nd	nd	nd	nd	nd
Acetone	250	nd		nd	nd	nd	nd	nd
MEK	250	nd		nd	nd	nd	nd	nd
MIBK	250	nd		nd	nd	nd	nd	nd
2-Henanone	250	nd		nd	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	84%	82%	76%	75%	76%	73%	70%
Toluene-d8	106%	91%	92%	97%	95%	99%	99%
1,2-Dichloroethane-d4	80%	91%	96%	93%	97%	97%	97%
4-Bromofluorobenzene	116%	111%	122%	130%	123%	123%	127%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results		Dupl		
8260B (with Ketones), µg/kg		MTH BLK	SB10 4-5	SB10 4-5
Matrix	Soil	Soil	Soil	Soil
Date extracted	Reporting Limits	12/15/04	12/15/04	12/15/04
Date analyzed		12/15/04	12/15/04	12/15/04
Dichlorodifluoromethane	50	nd	nd	nd
Chloromethane	50	nd	nd	nd
Vinyl chloride(*)	50	nd	nd	nd
Bromomethane	50	nd	nd	nd
Chloroethane	50	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd
Methylene chloride	20	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd
Chloroform	50	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd
Benzene	50	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd
Trichloroethene	20	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd
Dibromomethane	50	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd
Toluene	50	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd
Chlorobenzene	50	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd
Ethylbenzene	50	nd	nd	nd
Xylenes	50	nd	nd	nd
Styrene	50	nd	nd	nd
Bromoform	50	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd
Bromobenzene	50	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd



AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results		Dupl		
8260B (with Ketones), µg/kg		MTH BLK	SB10 4-5	SB10 4-5
Matrix	Soil	Soil	Soil	Soil
Date extracted	Reporting Limits	12/15/04	12/15/04	12/15/04
Date analyzed		12/15/04	12/15/04	12/15/04

tert-Butylbenzene	50	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd
sec-Butylbenzene	50	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd
Naphthalene	50	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd
Acetone	250	nd	nd	nd
MEK	250	nd	nd	nd
MIBK	250	nd	nd	nd
2-Hexanone	250	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	84%	76%	78%
Toluene-d8	106%	99%	90%
1,2-Dichloroethane-d4	80%	81%	80%
4-Bromofluorobenzene	116%	122%	112%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
Acceptable Recovery limits: 70% TO 130%  
Acceptable RPD limit: 30%

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results

8260B (with Ketones), µg/l	MTH BLK	LCS	GW-1 (SB-1)	GW-5 (SB-6)	GW-6 (SB-7)
Matrix	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	12/15/04	12/15/04	12/15/04	12/15/04
Dichlorodifluoromethane	1.0	nd		nd	nd
Chloromethane	1.0	nd		nd	nd
Vinyl chloride(*)	0.2	nd		nd	nd
Bromomethane	1.0	nd		nd	nd
Chloroethane	1.0	nd		nd	nd
Trichlorofluoromethane	1.0	nd		nd	nd
1,1-Dichloroethene	1.0	nd		nd	nd
Methylene chloride	1.0	nd		nd	nd
trans-1,2-Dichloroethene	1.0	nd		nd	nd
1,1-Dichloroethane	1.0	nd		nd	nd
2,2-Dichloropropane	1.0	nd		nd	nd
cis-1,2-Dichloroethene	1.0	nd		nd	nd
Chloroform	1.0	nd		nd	nd
1,1,1-Trichloroethane	1.0	nd		nd	nd
Carbontetrachloride	1.0	nd		nd	nd
1,1-Dichloropropene	1.0	nd		nd	nd
Benzene	1.0	nd	80%	nd	nd
1,2-Dichloroethane(EDC)	1.0	nd		nd	nd
Trichloroethene	1.0	nd	103%	nd	nd
1,2-Dichloropropane	1.0	nd		nd	nd
Dibromomethane	1.0	nd		nd	nd
Bromodichloromethane	1.0	nd		nd	nd
cis-1,3-Dichloropropene	1.0	nd		nd	nd
Toluene	1.0	nd	101%	nd	nd
trans-1,3-Dichloropropene	1.0	nd		nd	nd
1,1,2-Trichloroethane	1.0	nd		nd	nd
Tetrachloroethene	1.0	nd		nd	nd
1,3-Dichloropropane	1.0	nd		nd	nd
Dibromochloromethane	1.0	nd		nd	nd
1,2-Dibromoethane (EDB)*	0.01	nd		nd	nd
Chlorobenzene	1.0	nd	98%	nd	nd
1,1,1,2-Tetrachloroethane	1.0	nd		nd	nd
Ethylbenzene	1.0	nd		nd	nd
Xylenes	1.0	nd		nd	nd
Styrene	1.0	nd		nd	nd
Bromoform	1.0	nd		nd	nd
Isopropylbenzene	1.0	nd		nd	nd
1,2,3-Trichloropropane	1.0	nd		nd	nd
Bromobenzene	1.0	nd		nd	nd
1,1,2,2-Tetrachloroethane	1.0	nd		nd	nd
n-Propylbenzene	1.0	nd		nd	nd
2-Chlorotoluene	1.0	nd		nd	nd
4-Chlorotoluene	1.0	nd		nd	nd
1,3,5-Trimethylbenzene	1.0	nd		nd	nd
tert-Butylbenzene	1.0	nd		nd	nd

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results

8260B (with Ketones), µg/l		MTH BLK	LCS	GW-1 (SB-1)	GW-5 (SB-6)	GW-6 (SB-7)
Matrix	Water	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	12/15/04	12/15/04	12/15/04	12/15/04	12/15/04
1,2,4-Trimethylbenzene	1.0	nd		nd	nd	nd
sec-Butylbenzene	1.0	nd		nd	nd	nd
1,3-Dichlorobenzene	1.0	nd		nd	nd	nd
Isopropyltoluene	1.0	nd		nd	nd	nd
1,4-Dichlorobenzene	1.0	nd		nd	nd	nd
1,2-Dichlorobenzene	1.0	nd		nd	nd	nd
n-Butylbenzene	1.0	nd		nd	nd	nd
1,2-Dibromo-3-Chloropropane	1.0	nd		nd	nd	nd
1,2,4-Trichlorobenzene	1.0	nd		nd	nd	nd
Hexachloro-1,3-butadiene	1.0	nd		nd	nd	nd
Naphthalene	1.0	nd		nd	nd	nd
1,2,3-Trichlorobenzene	1.0	nd		nd	nd	nd
Acetone	5.0	nd		nd	nd	nd
MEK	5.0	nd		nd	nd	nd
MIBK	5.0	nd		nd	nd	nd
2-Heptanone	5.0	nd		nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	84%	82%	80%	80%	80%
Toluene-d8	106%	91%	93%	99%	98%
1,2-Dichloroethane-d4	80%	91%	99%	91%	91%
4-Bromofluorobenzene	116%	111%	125%	123%	117%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
Acceptable Recovery limits: 70% TO 130%  
Acceptable RPD limit: 30%

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results		MS		MSD	RPD
8260B (with Ketones), µg/l		MTH BLK	GW-1 (SB-1)	GW-1 (SB-1)	GW-1 (SB-1)
Matrix	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	12/15/04	12/15/04	12/15/04	12/15/04
Dichlorodifluoromethane	1.0	nd			
Chloromethane	1.0	nd			
Vinyl chloride(*)	0.2	nd			
Bromomethane	1.0	nd			
Chloroethane	1.0	nd			
Trichlorofluoromethane	1.0	nd			
1,1-Dichloroethene	1.0	nd			
Methylene chloride	1.0	nd			
trans-1,2-Dichloroethene	1.0	nd			
1,1-Dichloroethane	1.0	nd			
2,2-Dichloropropane	1.0	nd			
cis-1,2-Dichloroethene	1.0	nd			
Chloroform	1.0	nd			
1,1,1-Trichloroethane	1.0	nd			
Carbontetrachloride	1.0	nd			
1,1-Dichloropropene	1.0	nd			
Benzene	1.0	nd	81%	77%	4%
1,2-Dichloroethane(EDC)	1.0	nd			
Trichloroethene	1.0	nd	108%	108%	0%
1,2-Dichloropropane	1.0	nd			
Dibromomethane	1.0	nd			
Bromodichloromethane	1.0	nd			
cis-1,3-Dichloropropene	1.0	nd			
Toluene	1.0	nd	106%	103%	2%
trans-1,3-Dichloropropene	1.0	nd			
1,1,2-Trichloroethane	1.0	nd			
Tetrachloroethene	1.0	nd			
1,3-Dichloropropane	1.0	nd			
Dibromochloromethane	1.0	nd			
1,2-Dibromoethane (EDB)*	0.01	nd			
Chlorobenzene	1.0	nd	101%	103%	1%
1,1,1,2-Tetrachloroethane	1.0	nd			
Ethylbenzene	1.0	nd			
Xylenes	1.0	nd			
Styrene	1.0	nd			
Bromoform	1.0	nd			
Isopropylbenzene	1.0	nd			
1,2,3-Trichloropropane	1.0	nd			
Bromobenzene	1.0	nd			
1,1,2,2-Tetrachloroethane	1.0	nd			
n-Propylbenzene	1.0	nd			
2-Chlorotoluene	1.0	nd			
4-Chlorotoluene	1.0	nd			
1,3,5-Trimethylbenzene	1.0	nd			
tert-Butylbenzene	1.0	nd			

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results		MS		MSD	RPD
8260B (with Ketones), µg/l		MTH BLK	GW-1 (SB-1)	GW-1 (SB-1)	GW-1 (SB-1)
Matrix	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	12/15/04	12/15/04	12/15/04	12/15/04

1,2,4-Trimethylbenzene	1.0	nd
sec-Butylbenzene	1.0	nd
1,3-Dichlorobenzene	1.0	nd
Isopropyltoluene	1.0	nd
1,4-Dichlorobenzene	1.0	nd
1,2-Dichlorobenzene	1.0	nd
n-Butylbenzene	1.0	nd
1,2-Dibromo-3-Chloropropane	1.0	nd
1,2,4-Trichlorobenzene	1.0	nd
Hexachloro-1,3-butadiene	1.0	nd
Naphthalene	1.0	nd
1,2,3-Trichlorobenzene	1.0	nd
Acetone	5.0	nd
MEK	5.0	nd
MIBK	5.0	nd
2-Henanone	5.0	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	84%	81%	80%
Toluene-d8	106%	97%	94%
1,2-Dichloroethane-d4	80%	92%	92%
4-Bromofluorobenzene	116%	118%	122%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
Acceptable Recovery limits: 70% TO 130%  
Acceptable RPD limit: 30%

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results		Dupl				
8270, mg/kg		MTH BLK	LCS	SB1 6-8	SB6 7-8	SB6 7-8
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/16/04	12/16/04	12/16/04	12/16/04	12/16/04
Date analyzed	Limits	12/16/04	12/16/04	12/16/04	12/16/04	12/16/04
Phenol	0.50	nd		nd	nd	nd
2-Chlorophenol	0.50	nd		nd	nd	nd
Bis (2-chloroethyl) ether	0.50	nd		nd	nd	nd
1,3-Dichlorobenzene	0.10	nd		nd	nd	nd
1,4-Dichlorobenzene	0.10	nd	95%	nd	nd	nd
1,2-Dichlorobenzene	0.10	nd		nd	nd	nd
2-Methylphenol (o-cresol)	0.10	nd		nd	nd	nd
Bis (2-chloroisopropyl) ether	0.10	nd		nd	nd	nd
3,4-Methylphenol (m,p-cresol)	0.10	nd		nd	nd	nd
Hexachloroethane	0.10	nd		nd	nd	nd
2-Nitrophenol	0.50	nd	100%	nd	nd	nd
2,4-Dimethylphenol	0.50	nd		nd	nd	nd
Bis (2-chloroethoxy) methane	0.10	nd		nd	nd	nd
2,4-Dichlorophenol	0.50	nd	99%	nd	nd	nd
1,2,4-Trichlorobenzene	0.10	nd		nd	nd	nd
Naphthalene	0.10	nd		nd	nd	nd
2,6-Dichlorophenol	0.50	nd		nd	nd	nd
Hexachloropropylene	0.50	nd		nd	nd	nd
Hexachlorobutadiene	0.50	nd		nd	nd	nd
4-Chloro-3-methylphenol	0.50	nd	80%	nd	nd	nd
1,2,4,5-Tetrachlorobenzene	0.50	nd		nd	nd	nd
Hexachlorocyclopentadiene	0.10	nd		nd	nd	nd
2,4,6-Trichlorophenol	0.50	nd	90%	nd	nd	nd
2,4,5-Trichlorophenol	0.50	nd		nd	nd	nd
2-Chloronaphthalene	0.10	nd		nd	nd	nd
Dimethylphthalate	0.10	nd		nd	nd	nd
Acenaphthylene	0.10	nd	105%	nd	nd	nd
Acenaphthene	0.10	nd		nd	nd	nd
2,4-Dinitrophenol	0.50	nd		nd	nd	nd
4-Nitrophenol	0.50	nd		nd	nd	nd
Pentachlorobenzene	0.50	nd		nd	nd	nd
2,3,4,6-Tetrachlorophenol	0.50	nd		nd	nd	nd
Fluorene	0.10	nd		nd	nd	nd
2,4,6-Tribromophenol	0.50	nd		nd	nd	nd
Diethylphthalate	0.10	nd		nd	nd	nd
4-Chlorophenylphenylether	0.50	nd		nd	nd	nd
N-Nitrosodiphenylamine	0.10	nd		nd	nd	nd
4-Bromophenylphenylether	0.10	nd		nd	nd	nd
Hexachlorobenzene	0.10	nd		nd	nd	nd
Pentachlorophenol	0.50	nd	85%	nd	nd	nd
Phenanthrene	0.10	nd		nd	nd	nd
Anthracene	0.10	nd		nd	nd	nd
2-sec-Butyl-4,6-dinitrophenol	0.50	nd		nd	nd	nd
Di-n-butylphthalate	0.10	nd		nd	nd	nd

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results		Dupl				
8270, mg/kg		MTH BLK	LCS	SB1 6-8	SB6 7-8	SB6 7-8
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/16/04	12/16/04	12/16/04	12/16/04	12/16/04
Date analyzed	Limits	12/16/04	12/16/04	12/16/04	12/16/04	12/16/04

Fluoranthene	0.10	nd	100%	nd	nd	nd
Pyrene	0.10	nd		nd	nd	nd
Butylbenzylphthalate	0.50	nd		nd	nd	nd
Benzo(a)anthracene	0.10	nd		nd	nd	nd
Chrysene	0.10	nd		nd	nd	nd
Bis (2-ethylhexyl) ether	0.10	nd		nd	nd	nd
Di-n-octylphthalate	0.50	nd		nd	nd	nd
Benzo(b)fluoranthene	0.10	nd		nd	nd	nd
Benzo(k)fluoranthene	0.10	nd		nd	nd	nd
Benzo(a)pyrene	0.10	nd	89%	nd	nd	nd
Indeno(1,2,3-cd)pyrene	0.10	nd		nd	nd	nd
Dibenzo(a,h)anthracene	0.10	nd		nd	nd	nd
Benzo(ghi)perylene	0.10	nd		nd	nd	nd

Surrogate recoveries						
Nitrobenzene-d5		192%	89%	130%	129%	125%
2-Fluorobiphenyl		88%	86%	92%	86%	79%
4-Terphenyl-d14		83%	78%	86%	91%	81%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
Acceptable Recovery limits: 70% TO 130%  
Acceptable RPD limit: 30%

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results		Dupl				
8270, µg/L		MTH BLK	LCS	GW-1 (SB-1)	GW-5 (SB-6)	GW-5 (SB-6)
Matrix	Water	Water	Water	Water	Water	Water
Date extracted	Reporting	12/16/04	12/16/04	12/16/04	12/16/04	12/16/04
Date analyzed	Limits	12/16/04	12/16/04	12/16/04	12/16/04	12/16/04
Phenol	2.0	nd		nd	nd	nd
2-Chlorophenol	2.0	nd		nd	nd	nd
Bis (2-chloroethyl) ether	2.0	nd		nd	nd	nd
1,3-Dichlorobenzene	2.0	nd		nd	nd	nd
1,4-Dichlorobenzene	2.0	nd	95%	nd	nd	nd
1,2-Dichlorobenzene	2.0	nd		nd	nd	nd
2-Methylphenol (o-cresol)	2.0	nd		nd	nd	nd
Bis (2-chloroisopropyl) ether	2.0	nd		nd	nd	nd
3,4-Methylphenol (m,p-cresol)	2.0	nd		nd	nd	nd
Hexachloroethane	2.0	nd		nd	nd	nd
2-Nitrophenol	10	nd	100%	nd	nd	nd
2,4-Dimethylphenol	10	nd		nd	nd	nd
Bis (2-chloroethoxy) methane	2.0	nd		nd	nd	nd
2,4-Dichlorophenol	10	nd	99%	nd	nd	nd
1,2,4-Trichlorobenzene	2.0	nd		nd	nd	nd
Naphthalene	0.1	nd		nd	nd	nd
2,6-Dichlorophenol	10	nd		nd	nd	nd
Hexachloropropylene	10	nd		nd	nd	nd
Hexachlorobutadiene	10	nd		nd	nd	nd
4-Chloro-3-methylphenol	10	nd	80%	nd	nd	nd
1,2,4,5-Tetrachlorobenzene	2.0	nd		nd	nd	nd
Hexachlorocyclopentadiene	2.0	nd		nd	nd	nd
2,4,6-Trichlorophenol	10	nd	90%	nd	nd	nd
2,4,5-Trichlorophenol	10	nd		nd	nd	nd
2-Chloronaphthalene	2.0	nd		nd	nd	nd
Dimethylphthalate	2.0	nd		nd	nd	nd
Acenaphthylene	0.1	nd	105%	nd	nd	nd
Acenaphthene	0.1	nd		nd	nd	nd
2,4-Dinitrophenol	10	nd		nd	nd	nd
4-Nitrophenol	10	nd		nd	nd	nd
Pentachlorobenzene	2.0	nd		nd	nd	nd
2,3,4,6-Tetrachlorophenol	2.0	nd		nd	nd	nd
Fluorene	0.1	nd		nd	nd	nd
2,4,6-Tribromophenol	10	nd		nd	nd	nd
Diethylphthalate	10	nd		nd	nd	nd
4-Chlorophenylphenylether	2.0	nd		nd	nd	nd
N-Nitrosodiphenylamine	2.0	nd		nd	nd	nd
4-Bromophenylphenylether	2.0	nd		nd	nd	nd
Hexachlorobenzene	2.0	nd		nd	nd	nd
Pentachlorophenol	10	nd	85%	nd	nd	nd
Phenanthrene	0.1	nd		nd	nd	nd
Anthracene	0.1	nd		nd	nd	nd
2-sec-Butyl-4,6-dinitrophenol	10	nd		nd	nd	nd
Di-n-butylphthalate	2.0	nd		nd	nd	nd



AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results						Dupl
8270, µg/L		MTH BLK	LCS	GW-1 (SB-1)	GW-5 (SB-6)	GW-5 (SB-6)
Matrix	Water	Water	Water	Water	Water	Water
Date extracted	Reporting	12/16/04	12/16/04	12/16/04	12/16/04	12/16/04
Date analyzed	Limits	12/16/04	12/16/04	12/16/04	12/16/04	12/16/04

Fluoranthene	0.1	nd	100%	nd	nd	nd
Pyrene	0.1	nd		nd	nd	nd
Butylbenzylphthalate	10	nd		nd	nd	nd
Benzo(a)anthracene	0.1	nd		nd	nd	nd
Chrysene	0.1	nd		nd	nd	nd
Bis (2-ethylhexyl) ether	2.0	nd		nd	nd	nd
Di-n-octylphthalate	10	nd		nd	nd	nd
Benzo(b)fluoranthene	0.1	nd		nd	nd	nd
Benzo(k)fluoranthene	0.1	nd		nd	nd	nd
Benzo(a)pyrene	0.1	nd	89%	nd	nd	nd
Indeno(1,2,3-cd)pyrene	0.1	nd		nd	nd	nd
Dibenzo(a,h)anthracene	0.1	nd		nd	nd	nd
Benzo(ghi)perylene	0.1	nd		nd	nd	nd

Surrogate recoveries						
Nitrobenzene-d5		104%	89%	94%	98%	98%
2-Fluorobiphenyl		76%	86%	77%	90%	90%
4-Terphenyl-d14		83%	78%	73%	79%	79%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
Acceptable Recovery limits: 70% TO 130%  
Acceptable RPD limit: 30%

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results

Metals (7010), mg/kg		MTH BLK	LCS	SB1 6-8	SB2 4-6	SB3 7-8	SB4 3-4
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/17/04	12/17/04	12/17/04	12/17/04	12/17/04	12/17/04
Date analyzed	Limits	12/17/04	12/17/04	12/17/04	12/17/04	12/17/04	12/17/04
Lead (Pb)	1.0	nd	113%	nd	nd	2.5	nd
Chromium (Cr)	2.0	nd	118%	nd	nd	7.6	nd
Cadmium (Cd)	1.0	nd	104%	nd	nd	nd	nd
Arsenic (As)	2.0	nd	102%	nd	nd	2.8	nd
Barium (Ba)	10	nd	105%	nd	nd	nd	nd
Silver (Ag)	1.0	nd	90%	nd	nd	nd	nd
Selenium (Se)	10	nd	82%	nd	nd	nd	nd
Mercury (Hg) (7470A)	0.5	nd	85%	nd	nd	nd	nd

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

J - estimated value

Results reported on dry-weight basis

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results

Metals (7010), mg/kg		MTH BLK	SB4 7-8	SB5 7-8	SB6 7-8	SB7 3-4	SB7 7-9
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/17/04	12/17/04	12/17/04	12/17/04	12/17/04	12/17/04
Date analyzed	Limits	12/17/04	12/17/04	12/17/04	12/17/04	12/17/04	12/17/04
Lead (Pb)	1.0	nd	nd	nd	nd	1.3	nd
Chromium (Cr)	2.0	nd		4.9	nd	nd	2.1
Cadmium (Cd)	1.0	nd		nd	nd	nd	nd
Arsenic (As)	2.0	nd		nd	nd	nd	nd
Barium (Ba)	10	nd		nd	nd	nd	nd
Silver (Ag)	1.0	nd		nd	nd	nd	nd
Selenium (Se)	10	nd		nd	nd	nd	nd
Mercury (Hg) (7470A)	0.5	nd		nd	nd	nd	nd

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

J - estimated value

Results reported on dry-weight basis

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results

MS

Metals (7010), mg/kg		MTH BLK	SB8 4-5	SB8 9-10	SB9 4-5	SB10 4-5	SB10 4-5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/17/04	12/17/04	12/17/04	12/17/04	12/17/04	12/17/04
Date analyzed	Limits	12/17/04	12/17/04	12/17/04	12/17/04	12/17/04	12/17/04
Lead (Pb)	1.0	nd	8.1	nd	nd	4.1	106%
Chromium (Cr)	2.0	nd				nd	111%
Cadmium (Cd)	1.0	nd				nd	106%
Arsenic (As)	2.0	nd				nd	78%
Barium (Ba)	10	nd				nd	105%
Silver (Ag)	1.0	nd				nd	100%
Selenium (Se)	10	nd				nd	87%
Mercury (Hg) (7470A)	0.5	nd				nd	80%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

J - estimated value

Results reported on dry-weight basis

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results		MSD		RPD		
Metals (7010), mg/kg		MTH BLK	SB5 9-10	SB5 9-10	SB11 4-5	SB12 4-5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/17/04	12/17/04	12/17/04	12/17/04	12/17/04
Date analyzed	Limits	12/17/04	12/17/04	12/17/04	12/17/04	12/17/04
Lead (Pb)	1.0	nd	107%	1%	1.1	nd
Chromium (Cr)	2.0	nd	113%	2%		
Cadmium (Cd)	1.0	nd	108%	2%		
Arsenic (As)	2.0	nd	85%	9%		
Barium (Ba)	10	nd	106%	1%		
Silver (Ag)	1.0	nd	90%	11%		
Selenium (Se)	10	nd	93%	7%		
Mercury (Hg) (7470A)	0.5	nd	81%	1%		

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

J - estimated value

Results reported on dry-weight basis

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

**Analytical Results**

Metals Dissolved (7010), mg/l		MTH BLK	LCS	GW-1 (SB-1)	GW-2 (SB-2)	GW-3 (SB-3)
Matrix	Water	Water	Water	Water	Water	Water
Date extracted	Reporting	12/17/04	12/17/04	12/17/04	12/17/04	12/17/04
Date analyzed	Limits	12/17/04	12/17/04	12/17/04	12/17/04	12/17/04
Lead (Pb)	0.002	nd	113%	nd	0.006	0.003
Chromium (Cr)	0.01	nd	128%	nd	0.01	nd
Cadmium (Cd)	0.005	nd	90%	nd	nd	nd
Barium (Ba)	0.05	nd	90%	nd	nd	nd
Silver (Ag)	0.01	nd	114%	nd	nd	nd
Selenium (Se)	0.05	nd	105%	nd	nd	nd
Arsenic (As)	0.005	nd	96%	nd	nd	nd
Mercury (Hg) (7470A)	0.0005	nd	106%	nd	nd	nd

**Data Qualifiers and Analytical Comments**

nd - not detected at listed reporting limits

na - not analyzed

J - estimated value

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results

Metals Dissolved (7010), mg/l		MTH BLK	GW-4 (SB-5)	GW-5 (SB-6)	GW-6 (SB-7)
Matrix	Water	Water	Water	Water	Water
Date extracted	Reporting	12/17/04	12/17/04	12/17/04	12/17/04
Date analyzed	Limits	12/17/04	12/17/04	12/17/04	12/17/04
Lead (Pb)	0.002	nd	0.006	0.004	0.025
Chromium (Cr)	0.01	nd		0.02	nd
Cadmium (Cd)	0.005	nd		nd	nd
Barium (Ba)	0.05	nd		nd	nd
Silver (Ag)	0.01	nd		nd	nd
Selenium (Se)	0.05	nd		nd	nd
Arsenic (As)	0.005	nd		nd	nd
Mercury (Hg) (7470A)	0.0005	nd		nd	nd

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

J - estimated value

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

AAL Job Number: A41214-4  
Client: PBS Environmental  
Project Manager: Harry Goren  
Client Project Name: Federal Ctr Parking Lot  
Client Project Number: 40290.022 Task 02  
Date received: 12/14/04

Analytical Results

Metals Dissolved (7010), mg/l		MTH BLK	GW-7 (SB-8)
Matrix	Water	Water	Water
Date extracted	Reporting	12/17/04	12/17/04
Date analyzed	Limits	12/17/04	12/17/04
Lead (Pb)	0.002	nd	nd
Chromium (Cr)	0.01	nd	
Cadmium (Cd)	0.005	nd	
Barium (Ba)	0.05	nd	
Silver (Ag)	0.01	nd	
Selenium (Se)	0.05	nd	
Arsenic (As)	0.005	nd	
Mercury (Hg) (7470A)	0.0005	nd	

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

J - estimated value

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%



Laboratory Job #: A41214-4

2821 152 Avenue NE  
Redmond, WA 98052  
(425) 497-0110 fax: (425) 497-8089  
aachemlab@yahoo.com

Client: PRG Eng & Env  
Project Manager: Harry Boren  
Address: 130 Mickelson  
Phone: 206 233 9639 Fax: 762 4780

Project Name: Fed Ctr Pkg Lot  
Project Number: 40290.022 Task 02  
Collector: A Boren  
Date of collection: 12/14/04

Sample ID	Time	Matrix	Container type	8260 Volatiles	8021B Volatiles	BTEX	BTEX/NWTPH-Gx	NWTPH-Gx	NWTPH-Dx	NWTPH-HCID	8270 Semivolatiles	8082 PAH	8082 PCBs	8081 Pesticides	RCRA 8 Metals	Lead	Notes, comments	# of containers
1 SB-1 (6-8)	0855	S		X			X	X	X	X				X				
2 SB-2 (4-6)	0930						X	X						X				
3 SB-3 (3-4)	1030								X									
4 SB-3 (7-8)	1035					X		X						X				
5 SB-4 (3-4)	1110								X					X				
6 SB-4 (7-8)	1115								X						X			
7 SB-5 (3-4)	1150								X									
8 SB-5 (7-8)	1155		X			X		X					X					
9 SB-6 (3-4)	1240								X									
10 SB-6 (7-8)	1245		X			X		X		X				X				
11 SB-7 (3-4)	1310		X			X		X						X				
12 SB-7 (7-9)	1315	V	X			X		X						X				

Relinquished by:	Date/Time	Received by:	Date/Time
<u>Harry Boren</u>	<u>600/12/14/04</u>	<u>V. Hancock</u>	<u>12/14/04 18:45</u>
Relinquished by:	Date/Time	Received by:	Date/Time

Sample receipt info:

Total # of containers:

Condition (temp, °C)

Seals (intact?, Y/N)

Comments:

Turnaround time:

Same day ☐

24 hr ☒

48 hr ☐

Standard ☐

Laboratory Job #: A41214-4

2821 152 Avenue NE  
Redmond, WA 98052  
(425) 497-0110 fax: (425) 497-8089  
aachemlab@yahoo.com

Client: PBS Eng & Env  
Project Manager: Harry Boren  
Address: 130 McHenry  
Phone: 206 233 9639 Fax: 762 4780

Project Name: Fed Ctr Pkg Lot.  
Project Number: 40290.022 Task 02  
Collector: H Boren  
Date of collection: 12/14/04

	Sample ID	Time	Matrix	Container type	8260 Volatiles	821B Volatiles	BTEX	BTEX/NWTPH-Gx	NWTPH-Gx	NWTPH-Dx	NWTPH-HCID	8270 Semivolatiles	8270 PAH	8082 PCBs	8081 Pesticides	RCRA & Metals	Lead	Notes, comments	# of containers
1	SB-8(4-5)	1355	S							X							X		
2	SB-8(9-10)	1400	I							X							X		
3	SB-9(4-5)	1500								X							X		
4	SB-9(9-10)	1510								X									
5	SB-10(4-5)	1525			X		X	X							X				
6	SB-10(9-10)	1530								X									
7	SB-11(4-5)	1610								X							X		
8	SB-12(4-5)	1620	V							X							X		
9																			
10																			
11																			
12																			

Relinquished by:	Date/Time	Received by:	Date/Time
<u>Harry Boren</u>	<u>12/14/04 18:45</u>	<u>V. Traub</u>	<u>12/14/04 18:45</u>
Relinquished by:	Date/Time	Received by:	Date/Time

Sample receipt info:

Total # of containers:

Condition (temp, °C)

Seals (intact?, Y/N)

Comments:

Turnaround time:

Same day ☐

24 hr ☒

48 hr ☐

Standard ☐

Client: PRIS Eng & Envs

Project Manager: Harry Goren

Address: 130 Rickman

Phone: 206 233 9639 Fax: 762 4780

Project Name: Federal Air Parking Lot

Project Number: 40290,022 Task 02

Collector: H Goren

Date of collection: 12/14/04

Sample ID	Time	Matrix	Container type	8260 Volatiles	8021B Volatiles	BTEX	BTEX-NWTPH-GX	NWTPH-GX	NWTPH-DX	NWTPH-HCID	8270 PAH	PCB 8082	Pesticides 8081	RCRA 8 Metals	Lead	Notes, comments	# of containers
1 GW-1 (SB-1)	0910	W		X			X	X	X	X			X				
2 GW-2 (SB-2)	0940					X	X	X					X				
3 GW-3 (SB-3)	1040					X	X	X					X				
4 GW-4 (SB-5)	1200								X						X		
5 GW-5 (SB-6)	1250			X		X	X	X	X				X				
6 GW-6 (SB-7)	1320			X		X	X						X				
7 GW-7 (SB-8)	1410								X						X		
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	

Relinquished by:	Date/Time	Received by:	Date/Time
<u>Harry Goren</u>	<u>12/14/04 1600</u>	<u>V. Ivanov</u>	<u>12/14/04 1845</u>
Relinquished by:	Date/Time	Received by:	Date/Time

Sample receipt info:

Total # of containers:

Condition (temp, °C)

Seals (intact?, Y/N)

Comments:

Turnaround time:

Same day ☐

24 hr ☒

48 hr ☐

Standard ☐